



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,353	03/16/2001	David K. Sturley	873A 3024	9204

7590

07/08/2003

MICHAEL D WIGGINS
950 HARMON
BIRMINGHAM, MI 48009

EXAMINER

GARRETT, DAWN L

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 07/08/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,353

Applicant(s)

STURLEY, DAVID K.

Examiner

Dawn Garrett

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-19 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment received November 18, 2002, paper no. 5. Claims 1-3, 7, and 9-11 were amended. Claims 12-19 were added. Claims 1-19 are pending.
2. The drawings remain objected to because they are informal and hand drawn. Formal drawings will be required when the application is allowed.
3. The rejections of claims 7 and 9-11 under 35 USC 112, second paragraph, set forth in paper no. 2, par. 3-7 are withdrawn due to the amendments.
4. The rejection of claims 1-5, 10, and 11 under 35 USC 102(b) as being anticipated by Murakami (US 5,811,174) is withdrawn due to the amendment.
5. The rejection of claim 9 under 35 USC 103(a) as being unpatentable over Murakami (US 5,811,174) set forth in paper no. 2, par. 11 is withdrawn due to the amendment.
6. The rejection of claim 6 over 35 USC 103(a) as being unpatentable over Murakami (US 5,811,174) in view of Royce (US 5,376,303) set forth in paper no. 2, paragraph 12 is withdrawn due to the amendment.
7. The rejection of claim 7 under 35 USC 103(a) as being unpatentable over Murakami (US 5,811,174) in view of Hao (US 5,885,483) set forth in paper no. 2, paragraph 13 is withdrawn due the amendment.

Art Unit: 1774

8. The rejection of claim 8 under 35 USC 103(a) as being unpatentable over Murakami (US 5,811,174) in view of Kaz et al. (US 6,177,029) set forth in paper no. 2, paragraph 14 is withdrawn due to the amendment.

Claim Objections

9. Claims 7 and 10 are objected to because of the following informalities:

a. In claim 7, is suggested "and" be inserted before " $1 < n < 8$ ".

b. In claim 10, "a" should be deleted before "one surface".

Appropriate correction is required.

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

11. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 recites "another surface of the second planar light transmissive material". The word "another" is considered indefinite, because claim 2, upon which claim 11 depends, does not recite a surface. The word "another" in this instance is relative to a second surface, which has not been recited. Clarification and correction are required.

Claim Rejections - 35 USC § 103

12. Claims 1-5, 10-13, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami in view of Burnell-Jones (US 2001/0010367 A1). Murakami discloses a phosphorescent article comprising a first transparent resin layer, a

Art Unit: 1774

phosphorescent layer, and a second transparent resin layer sequentially superposed on a supporting layer that is reflective (see abstract). Figure 3 shows an embodiment of the layers showing they are planar on the outer surface and directly above and below the phosphorescent layer (see Fig. 3). The phosphorescent pigment of the phosphorescent layer is dispersed in a binder (see col. 6, lines 25-28) per the instant "layer of luminous material". The Murakami resin layers read upon the instant planar light transmissive material. Since the two resin layers are transparent, light can enter from the outer surfaces on these two resin layers per instant claim 12. Murakami fails to specifically teach the pigment in the phosphorescent is present in particle form. Burnell-Jones teaches it is known to add phosphorescent pigment *particles* to a resin or gel coat to produce a luminescent polymer (see page 3, par. 22 and 23). It would have been obvious to one of ordinary skill in the art to have used a resin according to the teachings of Burnell-Jones comprising phosphorescent pigment particles in a binder for the Murakami phosphorescent layer, because pigment particles are a known form of pigment for combining with a resin. The amount of pigment added to the Burnell-Jones resin is 0-10% by weight per instant claims 2, 13, and 17 (see page 9, par. 82; applicant states in the response, paper no. 5, the recited amount of luminescent particles in the instant claims is about 5% luminous particles by weight of the luminescent layer). The resin material may comprise polyester per instant claims 3 and 4 (see col. 7, lines 24-26). A printed layer comprising a logo may be formed on the outside of the Murakami resin layer 5 (see col. 9, lines 31-35) per instant claim 5. A supporting layer 1 comprised of a metal sheet capable of reflecting light is formed

Art Unit: 1774

adjacent a resin layer per instant claims 10 and 11 (see col. 5, lines 48-50 and 61-65).

Per instant claim 16, Murakami teaches it is known in the art to use luminescent containing markers or signs for guide signs in buildings (see col. 1, lines 22). It would have been obvious to have attached the Murakami phosphorescent article to a building as a safety marker, because Murakami teaches phosphorescent articles are beneficial for such a purpose.

13. Claims 6, 14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (U.S. 5,811,174) in view of Burnell-Jones (US 2001/0010367 A1) in further view of Royce (U.S. 5,376,303). Murakami and Burnell-Jones relied upon as set forth above for the rejection of claim 1. Murakami teaches a phosphorescent article comprising a first transparent resin layer, a phosphorescent layer, and a second transparent resin layer sequentially superposed on a supporting layer that is reflective (see abstract). The phosphorescent pigment of the phosphorescent layer is dispersed in a binder (see col. 6, lines 25-28) per the instant "layer of luminous material".

Murakami fails to teach the specific phosphorescent pigment formula recited in instant claims 6, 14, and 18. Royce teaches long decay phosphors of the instant claim 6 formula for printing inks (see col. 1, line 39). It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected a phosphor such as the one disclosed by Royce for the luminescent layer of the Murakami article, because Royce teaches the benefits of long decay by the phosphor.

14. Claim 7, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (U.S. 5,811,174) in view of Burnell-Jones (US 2001/0010367 A1) in

Art Unit: 1774

further view of Hao (U.S. 5,885,483). Murakami and Burnell-Jones are relied upon as set forth above for the rejection of claim 1. Murakami teaches a phosphorescent article comprising a first transparent resin layer, a phosphorescent layer, and a second transparent resin layer sequentially superposed on a supporting layer that is reflective (see abstract). The phosphorescent pigment of the phosphorescent layer is dispersed in a binder (see col. 6, lines 25-28) per the instant "layer of luminous material".

Murakami fails to teach the specific phosphorescent pigment formula recited in instant claims 7, 15, and 19. Hao teaches a long afterglow phosphor of the instant claim 7 formula (see abstract). The Hao improved phosphors may be mixed into inks or paints (see col. 5, lines 16-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the phosphor disclosed by Hao for the luminescent layer of the Murakami article, because Murakami teach the benefits of the phosphor having a long afterglow.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (U.S. 5,811,174) in view of Burnell-Jones (US 2001/0010367 A1) in further view of Kaz (U.S. 6,177,029). Murakami and Burnell-Jones are relied upon as set forth above for the rejection of claim 1. Murakami teaches a phosphorescent article comprising a first transparent resin layer, a phosphorescent layer, and a second transparent resin layer sequentially superposed on a supporting layer that is reflective (see abstract). The phosphorescent pigment of the phosphorescent layer is dispersed in a binder (see col. 6, lines 25-28) per the instant "layer of luminous material". Murakami fails to teach the specific phosphorescent properties of light emission recited in instant claim 8. Kaz

Art Unit: 1774

teaches luminescent components which absorb energy from a light source at a first wavelength and re-radiate the absorbed light at a second wavelength spectrum (see abstract). Practical applications of the Kaz luminescent materials are for plastic components, liquid resins, paints, and printing inks (see abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the phosphor disclosed by Kaz for the luminescent layer of the Murakami article, because Murakami teach the use of phosphorescent pigments in plastic for the luminescent layer.

Response to Arguments

16. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection. With regard to applicant's argument Murakami does not show planar light transmissive materials, Figure 3 does show each resinous layer has a planar outer surface and is planar above and below the luminescent layer.

Allowable Subject Matter

17. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Murakami teaches a supporting reflective layer adjacent a reflective layer (see col. 5, lines 61-65), but fails to clearly teach or to provide motivation for making the layer "partial or half silvered" as required by instant claim 9.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (703)305-0788. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached at (703)-308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

Art Unit: 1774

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-2351.

D.G.

July 2, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

A handwritten signature in cursive script, appearing to read "Cynthia H. Kelly", written over the printed name and title.